MODULE SPECIFICATION

Module code	
Module title in Polish	**Technologia robót betonowych**
Module title in English	**Technology of Concrete Works**
Module running from the academic year	**2016/2017**

A. MODULE IN THE CONTEXT OF THE PROGRAMME OF STUDY

Field of study	**Civil Engineering**
Level of qualification	**First cycle** *(first cycle, second cycle)*
Studies profile	**Academic** (*academic/practical)*
Mode of study	**Full-time** *(full-time / part-time)*
Specialism	
Organisational unit responsible for module delivery	**The Department of Building Engineering Technologies and Organisation**
Module co-ordinator	**Jerzy Wawrzeńczyk, PhD hab., Eng.**
Approved by	**Marek Iwański, Professor**

B. MODULE OVERVIEW

Module type	**Core module** (*core/programme-specific/elective HES*)*
Module status	**Compulsory module** *(compulsory / non-compulsory)*
Language of module delivery	**English**
Semester in the programme of study in which the module is taught	**Semester 4**
Semester in the academic year in which the module is taught	**Summer semester** *(winter / summer)*
Pre-requisites	**None** (*module code/module title, where appropriate)*
Examination required	**No** *(yes / no)*
ECTS credits	**2**

Mode of instruction	**lectures**	**classes**	**laboratories**	**project**	**others**
Total hours per semester	**15**			**15**	

* elective HES − elective modules in the Humanities and Economic and Social Sciences

C. LEARNING OUTCOMES AND ASSESSMENT METHODS

Module aims	The aim of the module is to acquire the abilities and competences as regards technologies and organisation of concrete works.

Module outcome code	Module learning outcomes	Mode of instruction *(l/c/lab/p/ others)*	Corresponding programme outcome code	Corresponding discipline-specific outcome code
W_01	A student has knowledge and understands basic phenomena and physical processes connected with the reology of asphaltic concrete.	l	B_W01	T1A_W01; T1A_W02
W_02	A student understands chemical and physical processes connected with cement hydratation as well as the impact of thermal and humidity conditions on bonding rate and the increase of concrete durability.	l	B_W02 B_W13	T1A_W01; T1A_W02; T1A_W03; T1A_W05; T1A_W06; T1A_W08
W_03	A student has knowledge as regards the technologies and organisation of concrete works.		B_W13	T1A_W02; T1A_W03; T1A_W06; T1A_W08
U_01	A student can use basic norms and guidelines concerning designing, realising and exploitation of building structures and their elements.	l/p	B_U13	T1A_U05; T1A_U07; T1A_U11; T1A_U15; T1A_U16
U_02	A student can organise construction site works according to the principles of technology, organisation, and management in civil engineering.	l/p	B_U20 B_U21	T1A_U03; T1A_U05; T1A_U09; T1A_U12; T1A_U13; T1A_U16
K_01	A student can work individually and co-operate in a team on the assigned task.	p	B_K01	T1A_K01; T1A_K03; T1A_K04
K_02	A student is responsible for the reliability of the results of his/her work.	p	B_K02	T1A_K02; T1A_K05; T1A_K07
K_03	A student can formulate conclusions and opinions of his/her own work.	p	B_K04	T1A_K01; T1A_K07

Module content:

1. Topics to be covered in the lectures

No.	Topics	Module outcome code
1	The impact of the technology of concrete production and conducting concrete works on structure durability. Technical specification and current construction regulations.	U_01
2	Manufacturing and production control concerning asphaltic concrete.	W_01 U_02
3	The organisation of supply, internal transport, and concrete feeding.	U_02
4	The methods of laying and solidifying concrete. The division into parts and the principles of working as well as dilatation breaks.	W_01 W_02
5	The organisation of concrete works in the case of walls, poles, and ceilings. Errors in concreting.	W_03
6	The causes of thermal and shrinking deformations. The maintenance of fresh concrete. The methods of controlling concrete durability in the structure.	W_01 W_03 U_02
7	The organisation of concrete works in the period of low temperatures.	W_01 U_02

2. Topics to be covered in the classes

3. Topics to be covered in the laboratories
4. Topics to be covered in the projects

Project number	Topics	Module outcome code
1	Discussing the aim and project scope. Issuing project subjects to students.	W_03 U_01
2-3	Discussing sample realisations of concrete objects: a foundation slab, industrial floors; the walls and a ceiling a public utility building; bridge structure; a sports hall.	W_01 W_03 U_02
4-7	Preparing the technology of realising the assigned case (project subject) according to the guidelines concerning the preparation of a technical specification.	W_03 U_02 K_01 K_02 K_03

Assessment methods

Module outcome code	Assessment methods *(Method of assessment; for module skills − reference to specific project, laboratory and similar tasks)*
W_01	A test and a project
W_02	A test and a project
W_03	A test and a project
U_01	A test and a project
U_02	A test and a project
K_01	A project
K_02	A project
K_03	A project

C. STUDENT LEARNING ACTIVITIES

ECTS summary		
	Type of learning activity	**Study time/ credits**
1	Contact hours: participation in lectures	**15**
2	Contact hours: participation in classes	
3	Contact hours: participation in laboratories	
4	Contact hours: attendance at office hours (2-3 appointments per semester)	**2**
5	Contact hours: participation in project-based classes	**15**
6	Contact hours: meetings with a project module leader	**3**
7	Contact hours: attendance at an examination	
8		
9	**Number of contact hours**	**35** *(total)*
10	**Number of ECTS credits for contact hours** *(1 ECTS credit =25-30 hours of study time)*	**1.4**
11	Private study hours: background reading for lectures	**5**
12	Private study hours: preparation for classes	
13	Private study hours: preparation for tests	**5**

14	Private study hours: preparation for laboratories	
15	Private study hours: writing reports	
16	Private study hours: preparation for a final test in laboratories	
17	Private study hours: preparation of a project/a design specification	**5**
18	Private study hours: preparation for an examination	
19		
20	**Number of private study hours**	**15** *(total)*
21	**Number of ECTS credits for private study hours** *(1 ECTS credit =25-30 hours of study time)*	**0.6**
22	**Total study time**	**50**
23	**Total ECTS credits for the module** *(1 ECTS credit =25-30 hours of study time)*	**2**
24	**Number of practice-based hours** *Total practice-based hours*	**25**
25	**Number of ECTS credits for practice-based hours** *(1 ECTS credit =25-30 hours of study time)*	**1**